ILM05.3 to ILM05.4
Summary of Changes

The ILM05.3 SOW document has been revised to ILM05.4 as identified in the Exhibit section(s) (and any other applicable sections within the ILM05.3 SOW) shown below. All changes identified in this document should be adhered to in conjunction with the ILM05.3 SOW as stipulated below.

Exhibit Section(s)	Revisions
Global	All references to “ILM05.3” are changed to “ILM05.4”.
Exhibit A: Section 4.2.3.1	The reporting requirement has been modified as follows: The Contractor shall be responsible for completing and submitting analysis data sheets and computer-readable data on diskette or compact disc (CD) (or via an alternate means of electronic transmission approved in advance by USEPA) in a format specified in this SOW and within the time specified in Exhibit B, Section 1.1.
Exhibit B: Section 2.7	The Data in Computer-Readable Format has been modified as follows: The Contractor shall provide a computer-readable copy for all samples in the SDG, as specified in Exhibit H and delivered as specified in Exhibit B, Section 1.1. Computer-readable data deliverables shall be submitted on DOS/Windows formatted 3.5-inch high-density 1.44 MB diskette(s), compact disc (CD), or via an alternate means of electronic transmission, if approved in advance by USEPA.
Exhibit B: Section 2.7.1	Add the following to the end of the section: The CD shall be packaged and shipped in such a manner that the CD cannot be bent or folded and will not be exposed to extreme heat/cold. The CD shall be included in the same shipment as the hardcopy data, and, at a minimum, be enclosed in a CD mailer.
Exhibit C: Section 1.0	The ICP-MS CRQL in water (µg/L) for vanadium has been modified from 1 to 5.
Exhibit D: Introduction: Section 1.6.2	The temperature range for the oven has been modified to 105˚C (± 5˚C).

Exhibit Section(s)	Revisions
Exhibit D: ICP-AES: Section 10.1.3.2.11	This section is modified as follows: Sample Filtration – The digested samples are shaken well to mix in any condensate within the digestion vessel before being opened. If necessary, the digestates are then filtered into 50 mL glass volumetric flasks through Whatman No. 41 (or equivalent) filter paper and diluted to 50 mL (if necessary). In place of filtering, the sample (after dilution and mixing) may be centrifuged or allowed to settle by gravity overnight to remove insoluble material. The samples are now ready for analysis. The sample results must be corrected by a factor of 1.11 in order to report final concentration values based on an initial volume of 45 mL. Concentrations so determined shall be reported as "Total".
Exhibit D: ICP-AES: Section 10.1.3.3.4	This section is modified as follows: Sample Filtration - The digested samples are shaken well to mix in any condensate within the digestion vessel before being opened. If necessary, the digestates are then filtered through Whatman No. 41 (or equivalent) filter paper and diluted to 55 mL (if necessary). In place of filtering, the sample (after dilution and mixing) may be centrifuged or allowed to settle by gravity overnight to remove insoluble material. The samples are now ready for analysis. The sample results must be corrected by a factor of 1.1 in order to report final concentration values based on an initial volume of 50 mL. Concentrations so determined shall be reported as "Total".
Exhibit D: ICP-AES: Section 10.1.4.3.13	This section is modified as follows: Sample Filtration – Shake the sample well to mix in any condensate within the digestion vessel before being opened. Filter the digestate into a 50 mL glass volumetric flask through Whatman No. 42 (or equivalent) filter paper. Rinse the sample digestion vessel, cap, connecting tube, and (if venting occurred) the overflow vessel into the 50 mL flask. Dilute to 50 mL. In place of filtering, the sample (after dilution and mixing) may be centrifuged or allowed to settle by gravity overnight to remove insoluble material. The samples are now ready for analysis. Concentrations so determined shall be reported as "Total".
Exhibit D: ICP-MS: Section 10.2.5	This section is modified as follows: All masses which might affect data quality must be monitored during the analytical run. At a minimum, the masses listed in Table 2 – Recommended Isotopes and Masses for Selected Elements, should be monitored. The masses must be monitored in the same scan that is used for the collection of the data. This information should be used to correct the data for identified interferences. Based on the instrument manufacturer's recommended procedures, the laboratory is not required to monitor every mass listed for each element. The laboratory may monitor additional masses not listed in Table 2.

Exhibit Section(s)	Revisions
Exhibit D: ICP-MS: Section 17 Table 2	The table is modified as follows: Table 2. Recommended Isotopes and Masses for Selected Elements

Element of Interest	Analyte Masses - Choose One, or More – **Calibrated**	Masses to be Monitored
Antimony	121	
Arsenic	75	77, 82 (Isobaric Equation Required)
Barium	135, 137	
Beryllium	9	
Cadmium	111	106, 108 (Isobaric Equation Required)
Chromium	52	
Cobalt	59	
Copper	63, 65	
Lead	206, 207, 208	
Manganese	55	
Nickel	60	
Selenium	78, 82	
Silver	107, 109	
Thallium	203, 205	
Vanadium	51	52, 53 (Isobaric Equation Required)
Zinc	66	
Potential Interferent		
Aluminum		27
Calcium (CaO on 60Ni)		44 (No Isobaric Equation Required)
Magnesium		24, 25, 26
Iron		54, 56, 57
Titanium (TiO on 63Cu)		47 (No Isobaric Equation Required)
Krypton (Kr on 82Se)		83 (No Isobaric Equation Required)
Tin (Sn on 115In)		118 (Isobaric Equation Required)

Exhibit Section(s)	Revisions
Exhibit D: ICP-MS: Section 17 Table 2	The NOTE is modified as follows: NOTE: Where possible, alternative isotopes are indicated. For laboratories using instruments that employ either collision cells or reaction cells to remove certain isobaric interferences, the use of stable compounds of a target analyte(s) with masses free from interference for quantitation is permitted. One example of this would be the quantitation of arsenic as the oxide at mass 91.
Exhibit D: Mercury: Section 10.1.3.1.1	The section is modified as follows: Transfer aliquots of the working mercury solution to a series of 300 mL BOD bottles, disposable polymer vials, or other suitable digestion vessels. Add sufficient reagent water to each vessel to make a total volume of 50-100 mL.
Exhibit D: Mercury: Section 10.1.3.2.1.1	The section is modified as follows: Transfer 50-100 mL, or an aliquot diluted to 50-100 mL, containing not more than 1 µg of mercury to a 300 mL BOD bottle, disposable polymer vial, or other suitable digestion vessel, and continue as described in Section 10.1.3.1.2.
Exhibit D: Mercury: Section 10.1.4.1.1	The section is modified as follows: Transfer aliquots of the working mercury solutions (see Section 7.2.1.3) to a series of 300 mL BOD bottles, disposable polymer vials, or other suitable digestion vessels. Add sufficient reagent water to each vessel to make a total volume of 10 mL.
Exhibit D: Mercury: Section 10.1.4.2.1.1	The section is modified as follows: Weigh a representative 0.20 g (±0.01 g) portion of wet sample and place in the bottom of a BOD bottle, disposable polymer vial, or other suitable digestion vessel. Add enough reagent water to each sample to make a total volume of 10 mL. Continue as described in Section 10.1.4.1.2.
Exhibit D: Cyanide: Section 7.1.4.1	The following language is added to the section: The phosphate buffer described in USEPA Method MCAWW 335.2 may be substituted for the acetate buffer.
Exhibit D: Cyanide: Section 7.1.5.2	The following language is added to the section: The phosphate buffer described in USEPA Method MCAWW 335.3 may be substituted for the acetate buffer.

Exhibit Section(s)	Revisions
Exhibit D: Cyanide: Section 9.5.2	The section is modified as follows: Each CCV analyzed shall reflect the conditions of analysis of all associated analytical samples (the preceding 10 analytical samples or the preceding analytical samples up to the previous CCV). The duration of analysis, rinses, and other related operations that may affect the CCV measured result may not be applied to the CCV to greater extent than the extent applied to the associated analytical samples.
Exhibit D: Cyanide: Section 10.3.1.1	The section is modified as follows: Allow all standards and samples to come to ambient room temperature prior to analysis. Withdraw 50 mL or less of the solution from the flask and transfer to a 100 mL volumetric flask. If less than 50 mL is taken, dilute to 50 mL with 0.25N sodium hydroxide solution (see Section 7.1.3.1). Add 1.0 mL of acetate buffer or 15 mL of phosphate buffer and mix. The dilution factor must be reported on Form XIII-IN.
Exhibit E: Section 8.3.3	A new section is added as follows: Logbooks shall be kept for all dilutions of standards and reagents. All subsequent dilutions from the primary standard and the calculations for determining their concentrations shall be recorded and verified by a second person. All solution standards shall be refrigerated, if required, when not in use. All solution standards shall be clearly labeled as to the identity of the analyte or analytes, the standard ID number of the solution, concentration, date prepared, solvent, expiration date of the solution, special storage requirements (if any), and initials of the preparer.
Exhibit H: Section 8.1	The section is modified as follows: The file shall be submitted on 3.5 inch, high density 1.44 MB diskettes or on compact discs (CD). The diskettes or CDs shall be formatted and recorded using DOS/Windows Operating Systems. The diskettes or CDs shall contain information relevant to one and only one Sample Delivery Group (SDG). An alternate means of electronic transmission may be utilized, if approved in advance by USEPA.
Exhibit H: Section 8.1.2	References to diskette are modified to refer to diskette or CD.
Exhibit H: Section 8.1.3	References to diskette are modified to refer to diskette or CD.